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CURRENT LITERATURE
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Vol. 4, No. 11. WASHINGTON, D. C. June, 1935.

Agriculture.

Agriculture's interest in America's world trade. Prepared in Division of information, Agricultural Adjustment Administration. 1935. 22p.

Cost of production and price. By George A. Pond. 1934. 8p. Minnesota. University. Agricultural extension division. Special bulletin. no. 166.

Dehydration of air in soil. By M.Aragou. Monthly Bulletin of Agriculture Science and Practice. v.26, no.4. April, 1935. p.169-175.

Drought and current farm imports. Prepared by Division of information. Agricultural adjustment administration. Washington. 1935. 40p.

Farmers must assert themselves. By Henry A. Wallace. Southern Planter. v.96, no.5. May, 1935. p.5.

Helping the farmer pay his debts. 1935. 15p. U.S. Farm credit administration. Circular no.12.

Managing the farm for better income. By P.E. McNall and I.F. Hall. 1934. 16p. Wisconsin. Agricultural experiment station. Bulletin no.429.

Money, credit, and farm credit. By E.A. Stokdyk.. Pacific Rural Press. v.129, no.18. May 4, 1935. p.472-473. Emergency in agricultural credit situation has passed. Future depends upon action of farmers in deciding whether they will take time and trouble to learn to control agencies which have been established and whether they will insist upon sufficient volume of business flowing through farm credit agencies to keep them in picture permanently.

Potato growing in Wisconsin. By J.G. Milward and J.W. Brann. 1935. 39p. Wisconsin. College of Agriculture. Extension service. Circular no.273.

Production of winter vegetables in the lower Rio Grande valley. By W.H. Friend. 1934. 39p. Texas. Agricultural experiment station. Circular no.73.

Air Conditioning.

Air-conditioning for commercial refrigeration and human comfort. By H.L. Lincoln. Refrigeration. v.57, no.5. May, 1935. p.22-30.

Alcohol.

Heat fundamentals doom alky-gas to failure as aid to farmer. By G.G. Brown. National Petroleum News. v.27, no.20. May 15, 1935. p. 24-A - 24-D. Petroleum industry which markets all motor fuel selling nearly one-quarter of its products to farm population, and obtaining most of its raw material, crude oil, from farm leases, is in entire sympathy with objects of convention and of sincere proponents of blending alcohol with motor fuel; but after careful technical and economic studies has reached conclusion that blending agricultural alcohol with gasoline is impractical, uneconomic, method doomed to failure as means of providing broader outlet for farm products under any conditions existing or likely to exist in this country for many years.

Minnesota alky-gas bills meet with reversals. National Petroleum News. v.27, no.6. April 17, 1935. p.22. Reference to alcohol blends and to increased rate of taxation on non-alcohol motor fuel was eliminated in senate committee. It is possible, but not likely, that when the bill gets before the house attempt will be made to include alcohol-gasoline feature. Effort to have similar house bill set on special order early this week was defeated. Bills provide 8-cent tax on motor fuel unless it contains 10 per cent alcohol, while alcohol-gasoline fuel would pay present 3-cent tax.

National organization is formed to promote alcohol-gasoline. By J.C. Chatfield. National Petroleum News. v.27, no.20. May 15, 1935. p.15-17. National Council of Agriculture, Industry and Science sponsored by Chemical Foundation. Promotion of domestic production of cellulose, plastics and vegetable oils is secondary object.

Nebraska is first State to enact alky-gas law. National Petroleum News. v.27, no. 20. May 15, 1935. p.17. Gasoline motor fuel under law will be taxed present five-cent rate. Motor fuel with alcohol will be taxed only four cents. Requirements of the law are: minimum amount of alcohol in motor fuel five per cent, maximum twenty per cent: Alcohol must be produced from farm products within continental limits of United States; and distributor must satisfy department of agriculture as to being registered dealer.

Associations.

Agriculture, industry, science. Utah Farmer. v.55. May 25, 1935. p.3,14. Joint conference of representatives of Agriculture, Industry and Science.

Directory of organizations in the engineering profession. 1935. 53p. Engineers' council for professional development, New York.

Proceedings of the forty-eighth annual convention of the Association of Land-Grant Colleges and Universities, Washington, D.C., November 19-24, 1934. 1935. 305p.

Associations. (Cont'd)

Provisional program, 29th annual meeting of the American Society of Agricultural Engineers. University of Georgia, Athens. June 17, 18, 19 and 20, 1935. Agricultural Engineering. v.16, no.5. May 1935. p.196-197.

Sixty-fifth annual convention. Civil Engineering. v.5, no.6. June 1935. p.373-378. Los Angeles, California, July 3-7, 1935. American Society of civil engineers.

Beams.

Proposed method of making compression tests on portions of concrete beams. By L.H. Koenitzer. 1935. 13p. Kansas. Engineering experiment station. Bulletin no.34.

Building Construction.

Bolt expands in concrete to anchor fixtures. Popular Mechanics. v.63, no.2. February, 1935. p.224. For anchoring fixtures to concrete, brick, stone and other solid masonry, new bolt with springlike body expands as it is driven, resulting in great holding power. Hole is drilled in material, fixture set in place and bolt is driven in. Holding power is obtained by unusual construction of bolt, which has a body sheared through the center. In same operation, each side of shear is deformed in opposite directions, result being an outward bow. As bolt is made of high carbon steel treated to get spring properties, bow forms spring tension when bolt is driven into hole. Anchoring device is made with several style heads, round, countersunk and stud. Stud head permits removal of fixtures at any time without disturbing bolt.

Carriage adapts rock drill to one-man operation. Popular Mechanics. v.63, no.2. February, 1935. p.221. Consists of framework with two steel wheels at one end and steel pins at other to hold it in position. Universal arm extending upward from frame holds drill, hose and accessories. Arm can be swung into practically any position, making it possible to hold drill vertically, horizontally and obliquely at any angle.

Design and construction of RBM lintels. By J.F. Nichol. Brick and Clay Record. v.86, no.5. May, 1935. p.160-164. Reinforced brick masonry in place of structural steel will save money and bring the brick house cost still nearer to that of frame.

Modernism in wood construction. American Builder and Building Age. v.57, no.6. June, 1935. p.28-29. Glued arches and plywood panel roof used successfully at Madison.

Old brick walls duplicated with concrete blocks. Popular Mechanics. v.63, no.2. February, 1935. p.183. Interlocking cast concrete blocks are being used to make walls to resemble old brick walls. Each block represents six layers of brickwork, interlocking joints being cemented in such a way that wall appears to be made up of individual bricks. Wash is applied to give effect of great age.

Building and Construction. (Cont'd)

Revolution in building construction gathers force. By Laurence Stern Magazine of Wall Street. v.56, no.2. May 17, 1935. p.70-71, 98. Prefabricated houses of steel, copper, cement, wood and other materials are coming on the market in growing numbers. May play important part in business recovery.

Climate.

Climatic cycles in the West. By Frank E. Bonner. Civil Engineering. v.5, no.6. June, 1935. p.343-346. No direct relation found between sun spots, tree rings, and rainfall.

Cotton and Cotton Ginning.

Cotton diseases and methods of control. By David C. Neal and W.W. Gilbert. 1935. 34p. U.S. Department of Agriculture. Farmers' bulletin no. 1745.

Some engineering features involved in U.S. cotton ginning investigations. By Charles A. Bennett. Cotton Ginners' Journal. v.6, no.8. May, 1935. p.3-4, 10-, 14, 16, 20.

Culverts.

Metal culvert construction for Lake Okeechobee levees. Engineering News-Record. v.114, no.20. May 16, 1935. p.693-695. Heavy pile foundations avoided. Climatic and water conditions required special non-corrosive quality of pipe and fixtures and heavy bituminous protection.

Dams.

American engineering genius hits peak in tremendous structure. Wyoming Stockman-Farmer. v.41, no.5. May, 1935. p.3-4, 11. Four main reasons for Boulder dam: 1. Flood control; 2. Silt control; 3. Power development; 4. Domestic water supply.

Design and construction of small earth dams. By Albert D. Taylor. Landscape Architecture. v.25, no.3. April, 1935. p.138-157.

Flexible timber facing applied to San Gabriel dam no.2. Engineering News-Record. v.114, no.24. June 13, 1935. p.836-838. Repair of rockfill includes removal and replacement of 75 per cent of old concrete facing that was cracked in settlement, dumping 60,000 cubic yards of additional rock and reconstructing the crest.

Fort Peck dam. By Harold O'Connell. Compressed Air Magazine. v.40, no.3. March, 1935. p.4671-4676. Part 1. The project and its scope.

Grand Coulee dam changed in design; power now omitted. Engineering News-Record. v.114, no.24. June 13, 1925. p.861. Order calls for construction up to height of 177 feet of complete section for 475-ft. dam ultimately contemplated.

Dams. (Cont'd)

Mission of Boulder dam fulfilled. By Walker R. Young. Civil Engineering. v.5, no.6. June, 1935. p.352-356. Data show almost 50,000 people continuously supported by wages during work, all fear of floods removed, ample water stored for irrigation and household use, the silt problem relieved, river transportation reestablished, and an abundance of electric power supplied at reasonable rates.

Diesel engines.

Mid-Continent refiners develop increasing business in fuel for Diesel motors. By John Steiger. National Petroleum News. v.27, no.14. April 3, 1935. p.35, 38. Table gives Diesel oil specifications as offered by refiners of special Diesel fuel; also Diesel oil specifications as recommended by Diesel motor manufacturers.

Drainage.

Drainage laws as applied to highways. By Roger M. Lee. Canadian Engineer. v.68, no.11. March 12, 1935. p.11-12. Relationship of various drainage acts to highway construction and maintenance explained. Procedure to be followed under drainage acts. Outlet and injuring liability.

Drainage pays dividends. By W.L. Powers. Oregon Farmer. v.58, no.10. May 16, 1935. p.17. Primary object of drainage is to remove excess water. This results in improved soil structure, increased root pasturage and increased supply of capillary or usable moisture. Drainage affords better air circulation, makes soil warmer, aids decay and nitrification, lengthens growing season, firms soil, lessens erosion, diminishes drought and prevents heaving and freezing out, or accumulation of acids or alkali. In addition drainage improves sanitary conditions, promotes healthfulness, and is aid to transportation and to general development of country. Timely drainage pays with big interest on money invested, through increased yields and larger productive land values.

Scientific research in soil drainage. By J.L. Russell. Journal of agricultural science. v.24, pt.4. October 1934. p.544-573. Optimum design for a drainage system; optimum drain depth and distance; Removal of water from the soil by drainage; measurement of soil permeability; Influence of height of ground water on soil fertility; Measurement of drain outflow rates; Relation between drain depth and distance; Effect of drainage on the moisture content of the soil; Effect of drainage on soil temperature; Effect of drainage on the physical properties of the soil.

Electricity on the Farm:

Electric brooding of chicks. I. Heat requirements. By W.T. Ackerman and others. 1934. 16p. New Hampshire. Agricultural experiment station. Station circular no.46.

Electricity on the Farm. (Cont'd)

Electro-farming in retrospect. By F. Burgoyne. Rural Electrification and Electro-Farming. v.10, no.120. May, 1935. p.402, 404. Practical article on rural electrification.

Essex rural area and the county of London Electric Supply Company, Ltd. Rural Electrification and Electro-Farming. v.10, no.126. May, 1935. p.389-390, 392-394, 396-397. Description of services provided in area which contains varied selection of industries.

Fingers of electricity reach farmward. By Harold Hofstrand. Iowa Agriculturist. v.36, no.2. May-June, 1935. p.132-133.

Morris Cooke directs rural electric plan. Electrical World. v.105, no.10. May 11, 1935. p.44. Appointed by President Roosevelt to head rural electrification division of works-relief program. Submits report embodying ideas on subject.

$100,000,000 for rural electrification. By Frank R. McNinch. Progressive Farmer. v.50, no.5. May, 1935. p.6. Table shows for each geographical section or grouping of states and then for each southern state separately percentage of farmers now enjoying electrical service either from electric lines or their own individual power plant. Cost of rural lines varies considerably, depending upon number of customers, length of line, load or demand, number of poles, size of conductors, topography, tree trimming, soil conditions, and other factors. Actual construction costs vary from $750 to more than $3000 per mile.

Power for the grindstone. By H.N. Colby and W.T. Ackerman. 1935. 6p. New Hampshire. Agricultural experiment station. Circular no.43.

Precautions demanded by rural electrification: Editorial. Implement and Machinery Review. v.61, no.721. May 1, 1935. p.56-57. There should be more educational publicity on subject. Unless electricity is removed from all dangers, whether fatal or anything less serious, it is not likely to become general servant of countryside its sponsors believe it ought to be, and for which it is inherently well fitted to be. Apart from question of leakage, primary requirement today is to see that electrification is efficiently carried out, and that certain well known factors of safety, particularly in insulation, wiring and so forth, are conformed to. Element of humidity, too, ought to be more properly understood in farming circles, and particularly in relation to conductivity, wherein perspiration and even effect of rain can exercise influence beyond comprehension of lay mind. How human body may become involved in circuit, and how fatal accidents can most needlessly occur, ought all to be taught, not to sound a tocsin of fear, but to ensure that there is no carelessness.

Electricity on the Farm. (Cont'd)

President sets up rural power unit. Electrical World. v.106, no.11. May 25, 1935. p.94-95. Morris L. Cooke, head of the administration. Outlined four schools of thought as to how government could best carry out its rural electrification program, as follows: (1) Government should use its money exclusively to aid private utilities in extending lines; (2) depend entirely on state and municipal agencies to develop rural extensions; (3) co-operate with co-operative concerns such as exist in many states and among farmers; (4) government should handle the plan itself, setting up production and transmission distribution lines.

Tremendous market lies in rural electrification. Domestic Commerce. v.15, no.15. May 30, 1935. p.267. Only 700,000 farms out of a total of 6,300,000 receive central station electric service. 92% of farm homes are without high line service and 86% without electrical service of any kind.

Virginia prepared for rural extensions. Electrical World. v.105, no.10. May 11, 1935. p.34-36. This has been done under sponsorship of State Corporation Commission. Commission and its consultants concentrated their study on farms which utility surveys had previously shown could not be served with sufficient revenue to justify investment, thus leaving to private initiative development of rural lines that are economically sound and confininf government subsidy to those which could be served by that means. Among collaborators were C.E. Seitz, professor of agricultural engineering, Virginia Polytechnic Institute; county agents from practically all counties in state, and all agricultural engineers of all utility companies. Working data from which subsequent studies were made included three major groups: (1) Existing lines, (2) lines previously surveyed; (3) lines surveyed for this report. Data under each group were classified by county and service company. Data on number of miles of line, total customers and customers per mile were tabulated for each group. Except for existing lines, data were also tabulated for estimated cost of lines, estimated annual revenue, and ratio of these two items.

Engineering.

The engineer as a citizen. By Allan R. Cullimore. Mechanical Engineering. v.57, no.4. April, 1935. p.209-210.

Erosion Control.

CCC camps to be used for soil erosion work. Engineering News-Record. v.114, no.20. May 16, 1935. p.723. Program is designed especially to combat drought damage in Middle West. About one-fourth of the camps will be established in seven states where dust storms have caused so much damage, and rest will be scattered throughout country where soil erosion by water is particularly important agricultural problem. In acute wind erosion sections including all or parts of the Dakotas, Colorado, Kansas, Texas, Oklahoma and New Mexico, 123 camps will be established.

Erosion Control.(Cont'd)

Control soil-blowing. By Tudor Charles. Kansas Farmer. v.73, no.9. April 27, 1935. p. 5, 16.

Engineering experiments in soil erosion control in Northwest. By P.C. McGrew. Agricultural Engineering. v.16, no.5. May, 1935. p.187-189. Effectiveness of any control method is, whenever possible, determined by actual measurements of runoff and soil losses as compared to check areas where particular erosion control measure is not used.

Farmers to control soil erosion. By John L. Mortimer. Farm and Ranch. v.54, no.6. March 15, 1935. p.2, 7. Steep slopes have been taken out of cultivation, and planted in grass, trees, and pasturage. "Strip cropping" is practiced on lesser slopes; crop rotation and field terraces are being put into operation.

High plains will bloom again. By C.W. Mullen. Farmer-Stockman. v.48, no.7. April 1, 1935. p.3, 18. Five successive lines of defense against wind erosion: First, utilization of erosion resisting crops and vegetative residues. Second, moisture conservation for maintenance of vegetation. Third, use of emergency cover crops. Fourth, resort to tree plantings for windbreaks. Fifth, emergency tillage operations come last in order of importance.

Nation-wide erosion project established. By Al Leffler. Iowa Agriculturist. v. no November, 1934. p.47. Located on Iowa-Missouri line almost due south of Des Moines and involves entire watershed of 150,000 acres drained by Big Creek.

New light-weight terracer speeds up erosion control. By Jack Burrell. Iowa Agriculturist. v.35, no.7. March, 1935. p.105. Machine consists primarily of an ordinary 180 inch bottom plow with high-speed rotor behind moldboard. Terrace ridge is formed when rotor throws out to side dirt turned up by plow. Advantage of machine is that it may be operated by one man, can be used anywhere plow can operate, requires no adjustments for curves in terracing line, and may be used for filling small gullies as well as constructing terraces.

Old problem gets modern treatment. Tractor Farming. v.20, nos 3 and 4. May-June, 1935. p.3. Soil erosion being attacked on wide front, and from many different angles.

Permeable groins of concrete check beach erosion. By E.A. Howard. Engineering News-Record. v.114, no.17. April 25, 1935. p.594-496. Beach and bluff at Cudahy, Wisconsin, on Lake Michigan, protected by drain back of crest to intercept surface water, and permeable outshore groins to build up the beach.

Plows are West's weapons against drifting soil. Science News Letter. v.27, no.733. April 27, 1935. p.273. Use of listing to check wind erosion of soil consists simply of running furrows across fields at right angles to direction of prevailing winds. Furrows, plowed deep,

Erosion Control.(Cont'd)

serve as traps for soil as it begins to drift, hindering it from getting a running start for leap into the air. Furrows are usually spaced from eight to fifteen feet apart. Plowing deep offers double advantage. It makes furrows last longer as drift-traps, and it exposes coherent cloddy soil which forms firmer little ramparts against assault of wind.

Save the people by saving the soil. By T.C. Richardson. Farm and Ranch. v.54, no.7. April 1, 1935. p.3. War against losses of surface natural resources must go on. Organized action is needed.

Save the people by saving the soil. By T.C. Richardson. Farm and Ranch. v.54, no.8. April 15, 1935. p.2, 7, 12.

Sod layer retards erosion. Popular Mechanics. v.63, no.2. February, 1935. p.190. Machine cuts sod into four-inch squares and drops one square on each three square feet of soil.

Soil erosion control work by the CCC. By H.J. Stockwell. Agricultural Engineering. v.16, no.5. May, 1935. p.194.

This loss never occurs where this is practiced. Washington Farmer. v.60, no.10. May 16, 1935. p.3. In main, effort at control includes seeding down of badly eroded hill tops and steep slopes to permanent grasses for hay or pasture, or planting of trees for woodlots; seeding of strips around hills to water-holding crops where practicable; plowing under of green manure crops, stubble and other humus-making substances; adoption of soil-building crop rotations and improved tillage methods; "plugging" of gullies, small and large; and elimination of burrowing and crop-destroying rodents, especially ground squirrels.

Visualizing soil erosion control. By M.F. Thurmond. Agricultural Engineering. v.16, no.5. May, 1935. p.191-192. Important factors to be considered in planning exhibit: (1) aim or purpose of exhibit; (2) audience and competition; (3) means of attracting attention; (4) gaining and holding interest; (5) causing reaction from the people; (6) type of exhibit to use; (7) nature of story to be told; (8) making exhibit self-explanatory; (9) advertising, and (10) following up exhibit.

Wind may destroy muckland industry. By C.L. Fitch. Market Growers Journal. v.56, no.10. May 15, 1935. p.228-229, 231. When whole marsh is to be protected from winds there must be outer windbreak, and outer zone into which earth from elsewhere may be dropped.

Farm Buildings and Equipment.

Curing eyesores by rehabilitation methods. By A.C. Williams. Farm and Ranch. v.54, no.7. April 1, 1935. p.2.

Farm Buildings and Equipment. (Cont'd)

Farm building plans. By Walter J. Dixon. Mitchell, S.D., 1935. 47 blue print sheets.

It costs little to shelter machinery in this shed. By P.H. Manly. Oregon.Farmer. v.58, no.9. May 2, 1935. p.4. Materials used were gasoline, round poles from their own land, 200 feet of sheathing, 1200 feet of siding $1.00 worth of miscellaneous nails, 20 pounds of nails for the roof, cedar for shakes (cost about $4.) and 29 days labor.

Monolithic concrete potato warehouse. By M.B. Jensen and F.A. Lyman. Agricultural Engineering. v.16, no.5. May, 1935. p.193.

Open this door to farm property improvement. 1935. 31p. U.S. Federal Housing Administration. FHA 136. Deals with benefits of repairs and renovation of existing buildings and construction of necessary new buildings, as well as how they can be financed under provisions of National Housing Act.

Some present day demands influencing farm building design. By J.C. Wooley. Agricultural Engineering. v.16, no.5. May, 1935. p.181-182, 186. First, demand for increase in salability of products from farm. Second factor is universal insistence on higher production per animal. Third factor, is need for control of parasites and disease. Fourth factor, result of development of machinery for processing and handling hay, grain and other crops. Fifth factor, unconscious desire for more pleasant and attractive employment in agriculture. Sixth factor, influence on distribution of labor on farm. Seventh factor, need for increase in use of buildings. Eighth factor, demand for farm dwellings that will give more service and require less care is upon us.

Special details for repair work on farm buildings. By Walter J. Dixon. Mitchell, S.D., 1935.24 blueprint sheets.

Farm Machinery and Equipment.

Barrel and disk seed scarifiers. By W.M. Hurst, W.R. Humphries and Roland McKee. 1935. 24p. U.S. Department of Agriculture. Circular no.345.

Better mowers for 1935 harvest. Implement and Tractor. v.50, no.10. May 18, 1935. p.14-15, 25. Gears enclosed in an oil bath, more roller and ball bearings, better distribution of weight and improved cutting are featured in recent developments of the industry.

Chiseling plow digs deep to combat drought. Popular Mechanics. v.63, no.2. February, 1935. p.252. Homemade plow that digs deep furrow is used to scratch down to hardpan and bring it to surface in flakes. There hardpan mixes with dry, loose topsoil, keeping powdery surface from drifting and being blown away. Success of method is attested by 1934 harvest on Oklahoma farm with average of 28 bushels

Farm Machinery and Equipment.(Cont'd)

of wheat per acre compared to three or four bushels per acre on neighboring farms. Plow was used to dig furrows about forty inches apart, ten to sixteen inches deep and only three inches wide. This stopped drifting of topsoil. When one of few rains of season came, water disappeared into narrow furrows instead of running off into roadside ditches and carrying soil with it. Ordinary strip of steel 16 inches long, three-quarters of an inch thick and about 3 inches wide is used. Its end is sharpened but not pointed. Steel strip is then curved to fit lister beam from which moleboard and frog have been removed, point protruding about 3 inches below point of lister beam and held in place by four bolts. Plow can be used before or after any type of planting. To get best results furrows should be run as soon after harvest as possible. Field is run "one way" soon after harvest, and "one way" again before sowing.

Chopping hay for storage. By A.J. Schwantes. Farm Implement News. v.56, no.10. May 9, 1935. p.34.

Combine harvesting cost. Farm Implement News. v.56, no.11. May 23, 1935. p.31. Figures issued by U.S. Bureau of Agricultural Economics.

Deep plowing will get farm trial. Farmer-Stockman. v.48, no.7. April 1, 1935. p.6, 15. Different types of plows are used and immediate purpose in view by those resorting to such practice may vary. Some farmers have used a commercial deep-land plow with idea of bringing up clay subsoil from beneath deep sand, mixing it with sand and thus improving mechanical texture of soil as well as increasing its moisture holding capacity, and preventing blowing. Some use a type of "chisel" plow, in many cases homemade, running small furrows from three to six feet apart to break up hardpan, with idea of making it possible for moisture to seep deeper into soil where it will be available for crop when needed during summer. In other cases practice has been used mainly as means of roughing up land to prevent loss of fertile topsoil by blowing.

Excavator digs sub-soil to improve crops. Popular Mechanics. v.63, no.2. February, 1935. p.188. Developed in Germany. Machine does work without removing topsoil. Two chains are used for propulsion. Rotating tube, connected to chassis by rotary axle, is adjustable for depth. Tube is fitted with knifelike blades which cut soil and cause it to drop through slits into tube. Worm drive in tube carries earth to top and discharges it fanlike to right and left over field. Upper section of tube contains knives that throw loosened earth behind them, in manner of burrowing mole. Only trace left is narrow furrow.

Farm and machine. v.2. Comprising report of the Institute for the year ended September 1934 and miscellaneous papers on agricultural engineering. Oxford, University press, 1935. 96p. Tractor facts

Farm Machinery and Equipment. (Cont'd)

and fancies, p.23-27; Institute traction dynamometer, p.27-33; Some notes on the operation and maintenance of Diesel engines on the farm, p.33-38; Market-garden tractors, p.38-44; Progress in arable spraying machinery and methods during 1934, p.54-61; Mode of action of mole drains, p.61-67; Grain cleaning equipment for farms, p.67-73; Sugar-beet harvesting, p.79-90; Implements for re-generating grassland, p.90-94.

Good bye, old binder, good bye! E.T. Leavitt. Farm Implement News. v.56, no.12. June 6, 1935. p.19.

Handling hay the modern way. B.S.C. Miller. Electricity on the farm. v.8, no.5. May, 1935. p.16, 24. Saving one man and one team of horses when putting up hay, and doing job in quicker time, are results of using electrified hay hoist. It is claimed that it takes one horsepower in motor for each 135 to 150 pounds of load at hoisting speed of 125 feet per minute.

Looking at the soybean from the farm equipment viewpoint. By C.O. Reed and E.A. Silver. Farm Implement News. v.56, no.11. May 23, 1935. p.14-21.

Management and mechanization in farming. By G.H. Nevile. Journal of the Ministry of Agriculture. v.41, no.12. March, 1935. p.1159-1167.

New farm equipment. By M. Glen Kirkpatrick. Farm Journal v.59, no.6. June, 1935. p.4.

New hay crop suggests need for better tools. By E.T. Leavitt. Implement and Tractor. v.50, no.10. May 18, 1935. p.13.

Reamer digs out post holes for filling in concrete. Popular Mechanics. v.63, no.2. February, 1935. p.253. Hole can be excavated at bottom to size desired for filling with concrete to make firm foundation. Reaming is accomplished by causing bottom blades on tool to spread after reamer has been inserted in post hole.

Vegetable seeder and cultivator for one-plow tractor. By D.C. Sprague. Farm Machinery and Equipment. no.1817. May 15, 1935. p.10-12.

Farm Mechanics.

How to make a rope halter. 1935. 4p. Washington state college. Extension service. 4-H club circular no.36.

Farmhouses.

Security for the farm home. Prepared by Division of Information. Agricultural Adjustment Administration. 1935. 11p.

Fences.

Good farming requires good fencing. By Frank A. Briggs. Farm and Ranch. v.54, no.6. March 15, 1935. p.3, 20.

Fences. (Cont'd)

Tight fence lasts longer. Hoard's Dairyman. v.80, no.8. April 25, 1935. p.196. Faulty construction of fences reduces their life by 25 per cent, and thus increases cost of fencing as well as failing to supply safe control of livestock.

Flood Control.

Articulated block pavement replaces upper bank slabs. Engineering News-Record. v.114, no.22. May 30, 1935. p.773-774. Newest Mississippi River revetment practice continues underwater articulated-concrete-block mat construction to crest of river bank.

Making England safe from floods. Reclamation Era. v.25, no.5. May, 1935. p.99. P. Malcolm Stewart, commissioner for special areas in England and Wales, has announced that he is cooperating with Ministry of Agriculture respecting England's 1,755,000 water-logged acres, and that ministry will shortly issue letter to local authorities offering substantial financial assistance for land drainage. One-seventh of land used for agricultural purposes, is dependent upon its fertility for arterial drainage. It has been estimated that total cost of making England safe from floods would be 30,000,000 pounds ($150,000,000) spread over ten years.

Slide rule for routing floods through storage reservoirs or lakes. By Chester J. Posey. Engineering News-Record. v.114, no.17. April 25, 1935. p.580-581. Slide-rule method described is simpler to use in that it involves no intermediate computations, no laying off of distances, and no graphical construction, except that which is done once and for all in construction of slide rule. It does require separate set of scales for each reservoir having a different volume - depth or outflow-depth relation.

Flow of Water.

Flow over rounded crests. - A new formula offered. By J.J. Doland. Engineering News-Record. v.114, no.16. April 18, 1935. p.551. Analysis of records of flow over rounded crest dams suggests a modified formula that simplifies calculations.

Forage Drying.

Artificial curing of forage crops. By Harold T. Barr. 1935. 14p. Louisiana. Agricultural experiment station. Bulletin no.261.

Day at the hay driers. By Grif McKay. Farm Journal. v.59, no.4. April, 1935. p.5, 18. Artificial drying produces superior hay.

Heating.

Advances made in electric heating. Canadian Engineer. v.68, no.17. April 23, 1935. p.32. Not immediate possibility.

Automatic stoker feeds coal and removes ashes. Popular Mechanics. v.63, no.2. February, 1935. p.192. Completely automatic by using

Heating. (Cont'd)

screw conveyor system to feed coal directly from bin to furnace. Ashes are removed without dust, to receptacle beneath cellar floor. Both feeder and ash worms are enclosed so these operations are clean. One-fourth horsepower electric motor supplies all necessary power, and also operates forced draft fan, while safety clutch stops stoker in case of obstruction.

Heat quantities, their nature and direction of flow. Heating and Ventilating. v.32, no.4. April, 1935. p.23-26.

Heating plant in fireplace warms house. Popular Mechanics. v.63, no.2 February, 1935. p.225. Arrangement eliminates boiler in basement. After bottom of fireplace is excavated to depth of twelve inches, it is lined and made level with the floor by installing a welded, sheet-metal water jacket in shape of hollow rectangle with cross section four by twelve inches. In rear of fireplace is mounted an ordinary steam radiator connected to hotwater system throughout house. aHot water passes through radiating system and returns to water jacket and radiating unit. Cost of heating entire house is said to be little more than that required to operate only as fireplace.

Oil burners and boilers. By L.E. Seeley. Mechanical Engineering. v.57, no.4. April, 1935. p.221-224. Their efficient application to domestic heating.

Hitches.

One man and many horses. By C.A. Burge. Pennsylvania Farmer. v.112, no.8. April 13, 1935. p.20-21. Advantages of hitch are: (1) saving in man labor; (2) elimination of side draft; (3) allowing each horse to work more comfortably; (4) better equalization and straight lines of draft which make individual horse more effective, and (5) increasing work done per animal.

Hotbeds.

Electric hotbeds for propagating woody cuttings. By Donald Wyman and Maurice W. Nixon. 1934. 21p. Cornell university. Agricultural experiment station. Bulletin no.618.

Growing plants with electricity. By John E. Nicholas. Pennsylvania Farmer. v.112, no.6. March 16, 1935. p.21.

Hotbed construction, electric and manure types. By Chester L. Vincent and Harry L. Garver. 1935. 12p. Washington state college. Extension bulletin. Extension bulletin no.203.

Houses.

Bill of materials and equipment for an 800,000 house per year program. American Builder and Building Age. v.56, no.2. February, 1934. p.48-49. Analysis of typical five-room frame house in $4,500 class to show materials and average equipment needed for construction.

Houses. (Cont'd)

Completely conditioned prefabricated house. Heating and Ventilating. v.32, no.5. May, 1935. p.19-21. Frame of house consists of (a) steel columns into which fit sidewalls, and (b) 16 in. joists, also of steel, fabricated of top and bottom strips jointed by diagonal bracing. They vary in size from three rooms, kitchen, and bath to nine rooms, kitchen, and three baths. Prices range from $3,800 to $9,900.

800,000 new homes per year needed for adequate housing. American Builder and Building Age. v.56, no.2. February, 1934. p.30-33, 94. 4,000,000 families living in doubled-up quarters are beginning to unscramble. Quarters considered unfit for human habitation and housing for 3,000,000 people are being torn down to an appreciable degree. 1,000,000 new families in last three years are looking for homes. $500,000,000 annual fire loss is taking its toll of residential property. Of 30,000,000 residential units in United States average life of which is fifty years, 600,000 wear out annually, and for last four years they have not been replaced.

$450 million appropriated for housing. Heating and Ventilating. v.32, no.5. May, 1935. p.47, 60.

List of published material relating to home building and maintenance. 1935. 23p. mimeographed. U.S. National bureau of standards. Letter circular no.287.

Millions of residential properties need modernization and repairs. By E.L. Gilbert. American Builder and Building Age. v.56, no.2. February, 1934. p.41-43.

New homes come packed in trucks. By Stanley Gerstin. Commercial Car Journal. v.49, no.3. May, 1935. p.23, 56, 89. Prefabricated modern motohomes.

Prefabricated houses. Refrigerating Engineering. v.29, no.5. May, 1935. p.235-240.

Private home buildings vital force in U.S. economic structure. By Joseph B. Mason. American Builder and Building Age. v.56, no.2. February, 1934. p.35-40. Basic industries depend on new homes for market for products.

Services of the National bureau of standards to the home building industry. 1934. 8p. U.S. National Bureau of Standards, Washington, D.C.

Unit plans. Typical room arrangements, site plans and details for low-rent housing. 1935. U.S. Public works administration. Housing division.

Where America lives. American Builder and Building Age. v.56, no.2. February, 1934. p.53-54. Ninety per cent of families live in single family dwellings. Average value is $4,778. Survey of farm dwellings shows surprising fact that 44 per cent are valued at less then $1,000,

Houses. (Cont'd)

and that only about 4 per cent are reported as worth $5,000 and over. Median value for owned farm dwellings is $1,135.

Insect Control.

Use of colored lights in electrocuting traps for control of grape leafhopper. By W.B. Herms and Joe K. Ellsworth. Agricultural Engineering. v.16, no.5. May, 1935. p.183-196. Progress report of first year's test.

Insulation.

Insulating value of residence walls. By W.G. Kaiser. Concrete. v.43, no.4. April, 1935. p.21-22. Table 2 Cost of fuel for standard house with different types of walls.

Modern heating demands insulation. By F.C. Russell. Fuel Oil. v.13, no.12. June, 1935. p.18, 52. Winter and summer conditioning costs cut by rock wool.

Notes on cork insulation. By P. Edwin Thomas. Ice and Refrigeration. v.88, no.6. June, 1935. p.370-372. Characteristics and definition of cork tissue. Construction of air cells and elasticity of cork. Insulation must provide granulation and retain cellular structure. Changes in methods of applying initial insulation to wall surfaces.

Thermal insulation. By Ezer Griffiths. Ice and Cold Storage. v.38, no.446. May, 1935. p.77. Thermal conductivity of materials used for solid carbon dioxide containers.

Irrigation.

Digging for rain. Tudor Charles. Kansas Farmer. v.73, no.10. May 11, 1935. p.3, 21. Small irrigation plant will pay for itself in dry years.

Farm irrigation pumping systems. By L.J. Smith and Harry L. Garver. 1935. 24p. Washington. Agricultural experiment station. Bulletin no.311.

Increasing aridity of farm lands develops new uses for drain tile. By J.H. Stout. Brick and Clay Record. v.86, no.5. May, 1935. p.168. System would require complete tiling of area irrigated. Well holes would be placed along mains with valves that could be closed to dam water in part to be watered. Length of levels would depend on grade on surface. Distance between laterals would depend on texture of soil and to crop to be cultivated. This method of irrigation would require use of large amount of tile on small area.

Irrigation canal falls. 1935. 62p. India. Central board of irrigation. Publication no.10. Deals principally with theory.

Irrigation district loans. By Martin R. Huberty. Pacific Rural Press. v.129, no.12. March 23, 1935. p.317. Table gives R.F.C. grants to California Irrigation Districts.

Irrigation. (Cont'd)

Irrigation districts get ready for activity. Idaho Farmer. v.53, no.5. March 7, 1935. p.10. Gives officers of American Falls reservoir district nos. 1 and 2, and Turn Falls Canal Company.

Irrigation districts make progress in 1934. Idaho Farmer. v.53, no.5. March 7, 1935. p.19.

Irrigation objectives. By O.W. Israelson. Utah Farmer. v.55, no.19. May 10, 1935. p.5. Ways of saving irrigation water.

Irrigation objectives. By O.W. Israelson. Utah Farmer. v.55. May 25, 1935. p.6. III. Soil water reservoirs.

Irrigation storate remains below last year. Engineering News-Record. v.114, no.16. April 18, 1935. p.573. As of April 1 total amount of water stored in reservoirs of U.S. Bureau of Reclamation was about 4,700,000 acre-ft. as against 5,400,000 acre-ft. on April 1, 1934.

Larger water supply for irrigation needs. Idaho Farmer. v.56, no.5. March 7, 1935. p.24. Larger water supply this year than in 1934 for various large agricultural projects throughout southern Idaho, particularly those along Snake river irrigation system. This covers watersheds of Teton mountains in western Wyoming and eastern Idaho; Minidoka mountains of southern Idaho, and the Sawtooth mountains of central Idaho.

Overhead irrigation of fields. By John E. Pickett. Pacific Rural Press. v.129, no.12. March 23, 1935. p.308. Advantages: 1. It may be used on rolling lands where levelling would be impossible. 2. It may be used on flat lands which have not been levelled for flooding. 3. It works well for bringing seeds through ground because it does not produce as much of a crust as flooding would.

Rates of flow from porous hose. By F.E. Staebner. Agricultural Engineering. v.16, no.5. May, 1935. p.193.

Relation of irrigated agriculture to economic well-being of nation. Reclamation Era. v.25, no.5. May, 1935. p.89-90. Development of irrigated lands not only adds stability to owner and immediate locality, but also has direct and favorable bearing upon all other communities.

Sewage irrigation in Texas. By Earl H. Goodwin. Public Works. v.66, no.3. March, 1935. p.23-24.

They pump for profits. By James H. White. Western Farm Life. v.37, no.5. May 15, 1935. p.3, 18. Farmers tell value of irrigation wells.

Land.

Consumer and the land. By Henry A. Wallace. 1935. 12p. mimeographed. U.S. Department of Agriculture. Address before General federation of Women's Clubs, Detroit, Mich., June 7, 1935.

Zoning of Minnesota lands. By O.B. Jesness and R.I. Nowell. 1934. 7p. Minnesota university. Agricultural extension division. Special bulletin no.167.

Lighting.

Eyes right! By H. Freeman Barnes. The Bulletin of Hydro-Electric Power Commission of Ontario. v.22, no.4. April, 1935. p.115-126. Deals primarily with light as one of major factors in seeing.

Language of lighting. The Bulletin of Hydro-Electric Power Commission of Ontario. v.22, no.4. April, 1935. p.135-141.

Lighting calculations. American Architect. v.145, no.2628. December, 1934. p.59-65.

Science of seeing in the home. The Bulletin of Hydro-Electric Power Commission of Ontario. v.22, no.4. April, 1935. p.126-135. Gives table of recommended lighting intensities for the home.

Lubrication.

Cotton gin lubrication. By Charles H. Wetzel. Cotton Ginners' Journal. v.6, no.8. May, 1935. p.12, 17, 19, 22.

Lubrication of rice growing and harvesting machinery. Lubrication. v.21, no.5. May, 1935. p.49-60.

Meters.

Current meters for precise flow measurement. By Dr. A. Ott. Canadian Engineer. v.68, no.22. May 28, 1935. p.13. In spite of numerous comparative tests already made degree of accuracy actually obtainable is not entirely clear.

Measuring water for irrigation. By J.E. Christiansen. 1935. 96p. California. Agricultural experiment station. Bulletin no.588. Describes more common methods and devices used in measuring water for irrigation in California.

Miscellaneous.

Chemistry in the next century. By Thomas Midgley, Jr. Industrial and Engineering Chemistry. v.27, no.5, May, 1935. p.494-496.

Digest of the purposes of current federal agencies. Prepared by United States Information Service. 1935. 55p. Mimeographed. Washington, D.C.

Farm population estimates, January 1, 1935. Domestic Commerce. v.15, no.14. May 20, 1935. p.238. Farm population was 32,779,000, on January 1, 1935, compared with 32,509,000 one year earlier according to annual estimate made by Bureau of Agricultural Economics.

Miscellaneous. (Cont'd)

Forests and the social fabric. By F.A. Silcox. National Waltonian. v.2, no.10. April, 1935. p.4-5, 11.

Human wants and the chemical industry. By Lamont du Pont, Industrial and Engineering Chemistry. v.27, no.5. May, 1935. p.485-493.

Only road to national recovery. By Ralph E. Flanders. Machinery. v.41, no.10. June, 1935. p.618-622. Inquiry into relations between agriculture and industry, prices and wages, government expenditures and income, and recovery and reform.

Secrets of more miles per gallon. Popular Mechanics. v.63, no.2. February, 1935. p.222-223, 136-A, 138-A. Shows average mileage at different speeds.

Stress analysis of failures in machine parts. By Franklin L. Everett. Mechanical Engineering. v.57, no.3. March, 1935. p.157-161. Analysis of failures and recommendations for proper design are made on basis of considering type of stress condition and form of structure.

Work for millions. By John W. O'Leary. Barron's. v.15, no.18. May 6, 1935. p.3. Fair start toward real recovery could be made if business and industry were permitted to reckon with reasonable certainty on what to expect tomorrow. Article based on survey of machinery and Allied Products Institute.

Paints and Painting.

Repainting old, paint-thirsty surfaces. By F.L. Browne. Paint, Oil and Chemical Review. v.97, no.10. May 16, 1935. p.11-12, 14.

Poultry Houses and Equipment.

Brooder houses and equipment. By H.G. Ware. Farm and Ranch. v.54, no.6. March 15, 1935. p.21.

Power Projects.

Government undertakes to build Passamaquoddy power project. Engineering News-Record. v.114, no.21. May 23, 1935. p.755. Estimated cost at $47,000,000.

Public Works.

Administration of four billion dollar works relief appropriation. Reclamation Era. v.25, no.5. May, 1935. p.97. Three major agencies and their administrators as follows: Division of Applications and Information, Frank C. Walker, of Montana. Works Allotment Division, Harold L. Ickes, of Illinois. Works Progress Division, Harry L. Hopkins, of New York.

Reclamation.

Another conservancy project discussed in Ohio. Engineering News-Record. v.114, no.16. April 18, 1935. p.546. Another Ohio conservancy project, similar to $34,000,000 Muskingum Valley development and subsequent $36,000,000 Scioto-Sandusky program now definitely proposed, is being contemplated for Hocking Valley in same state.

Reclamation Bureau work to center in Washington. Engineering News-Record. v.114, no.20. May 16, 1935. p.722. Under rearrangement of project operation will be shifted from Denver to Washington office of Bureau. Five operating districts have been created to promote efficiency and further unify operating policies and district supervisor has been named for each. Operating supervision is expected to give particular attention to problems connected with water supply, storage and delivery; improvement of irrigation methods; study of seepage; status of temporarily unproductive lands and of excess holdings; improvements in crop census; and promotion of general project welfare.

Refrigeration.

Cooling by refrigeration. By Henry D. Crane. Fuel Oil. v.13, no.12. June, 1935. p.14, 49-50. Three basic principles; types of room units available.

Quality of eggs is improved by electric cooler. Popular Mechanics. v.63, no.2. February, 1935. p.187. Consists of sheet metal box with two openings in top and another in one end. Small electric fan draws air from end opening and blows it through two top openings. In bottom of box is quart of waterwhich is drawn up into blotters hung vertically, process of evaporation aiding in cooling. Buckets containing eggs are equipped with screened bottoms and cooled air is blown up through bottoms and around eggs.

Refrigeration reduces food losses. By T.E. Hienton. Electricity on the farm. v.8, no.5. May, 1935. p.7-9.

Research.

Cavitation research. Mechanical Engineering. v.57, no.4. April, 1935. p.211-216. Progress report on work at Massachusetts Institute of Technology.

Recent progress in the coordination of agricultural research: Editorial. Experiment Station Record. v.72, no.5. May, 1935. p.577-580.

Reservoirs.

Tygart river reservoir project. By W.D. Styer. Civil Engineering. v.5, no.6. June, 1935. p.339-342. Presents considerations involved in constructing one of highest dams in eastern part of country.

Rivers.

Army engineers get $102,186,500 for river work. Engineering News-Record. v.114, no.21. May 23, 1935. p.754. Major undertakings: Mississippi

Rivers. (Cont'd)

river between mouth of the Missouri and Minneapolis, $25,000,000, to continue work on 9-ft. slack-water channel. Missouri River (Kansas City to Sioux City) $10,000,000 for construction of dikes and revetments. Fort Peck Dam. $16,000,000 for continuation of work. Passamaquoddy Bay, Eastport, Maine. $10,000,000 for start of work on a tidal power porject. Tygart River Dam, Grafton, West Virginia, $2,000,000 for continuation of construction of flood control reservoir. Kanawha River, West Virginia and Ohio. $5,580,000 to continue modernization of navigation facilities. Chesapeake and Delaware Canal. %5,107,000 for dredging and bank revetment. Beaver and Mahoning Rivers. $5,000,000 for dredging and construction of locks, dams and reservoirs to improve navigation facilities of river. Cape Cod Canal. $5,000,000 for continuation of dredging work in canal and in approach channels. New York State Barge Canal. $5,000,000 for enlargement of canal between Oswego and Hudson River, including dredging and bridge alterations.

Roofs.

Roofing materials. By Tyler Stewart Rogers. American Architect. v.146, no.2630. February, 1935. p.65-80/

Silos.

Silo a big money saver on average farm. By A.L. Haecker. Missouri Farmer. v.27, no. 11. June 1, 1935. p.3, 7.

Soil Moisture.

Farming on the level! Nebraska Farmer. v.77, no. 11. May 25, 1935. p.7. Discusses conserving moisture by contour farming and terracing.

Laboratory determination of optimum soil moisture. By B.G. Zimmerman. Engineering News-Record. v.114, no.24. June 13, 1935. p.838-839. Variation of optimum moisture curves with pressure. Determining zero air voids. Laboratory apparatus and procedure.

Making moisture go further. Implement and Tractor. v.50, no.10. May 18, 1935. p.12. Proper methods and equipment, with due consideration to fallowing, can accomplish much toward restoring profits to agriculture on the higher plains.

Soils.

Classification and agricultural value of New York soils. By Frank B. Howe. 1935. 83p. Cornell university. Agricultural experiment station. Bulletin no.619.

Soil surveys for highways in New Hampshire. By John G. Morton. Engineering News-Record. v.114, no.20. May 16, 1935. p.706-709. Classification of soils and methods of recording soil profiles and presenting data for road design and construction in northern states.

Specifications.

Specifications of combined harvester-threshers. Farm Implement News. v.56, no.11. May 23, 1935. p.36-37.

Specifications of grain threshers. Farm Implement News. v.56, no.11. May 23, 1935. p.32-35.

Specifications of silo fillers. Farm Implement News. v.56, no.11. May 23, 1935. p.38.

Surveying.

Geodetic level and rod. By D.L. Parkhurst. 1935. 14p. U.S. Coast and geodetic survey. Special publication no.129.

Terracing.

Right way to terrace. By P.O. Davis, Southern Agriculturist. v.65, no.4. April, 1935. p.8.

Teaching terracing with blocks. By D. Scoates. Agricultural Engineering. v.16, no.5. May, 1935. p.190-191.

Terracing - pro and con. Tractor Farming. v.20, nos. 3 and 4. May-June, 1935. p.4-5.

Terracing also saves soil from wind erosion. By W.A. Steele, Implement Record. v.32, no.6. June, 1935. p.10-11. Recent dust storms emphasize nation-wide need for action.

Tires.

Stresses in rubber tires. By H. Hencky. Mechanical Engineering. v.57, no.3. March, 1935. p.149-153. Explains mechanical properties of reinforcing fabric and effect of centrifugal stresses and stresses caused by changes in speed and direction of automobile.

Tractors.

Frenchman speaks of tractors. By Emil Ecker. Pennsylvania Farmer. v.112, no.7. March 30, 1935. p.5, 13.

Operating cost and upkeep of garden tractors. Market Growers Journal. v.56, no.10. May 15, 1935. p.230-231. II. California furnishes guide as to upkeep; other detailed studies of various types helpful to growers.

Viscometers.

Series of viscometer tips to cover wide viscosity range proposed. By H.G. Nevitt. National Petroleum News. v.27, no.14. April 3, 1935. p.27-32. Article has attempted to briefly cover some of major criticisms of present Saybolt viscometer, namely limited viscosity range of two present standardized tips, and objectionable arbitrary viscosity units

Viscometers. (Cont'd)
that result from their use, latter resulting in inconvenient conversion to fundamental scientific units.

Waste Products Utilization.

Papermaking quality of cornstalks. By Charles G. Weber, Merle B. Shaw and Martin J. O'Leary. 1935. 9p. National bureau of standards. Miscellaneous publication M147.

Water Supply.

Ground water as a source of public water supplies. By Leland K. Wenzel. Public Works. v.66, no.3. March, 1935. p.12-14. About 6,500 public water supplies in United States, out of total of about 10,000, are derived from wells, according to estimates based on incomplete data recently collected by United States Geological Survey. In 29 states more than half of public water supplies are obtained from wells, and in 16 states more than three-fourths of supplies are obtained from this source. Texas, Iowa and Illinois apparently lead in number of well water supplies, each state having more than 400.

He just goes rollin' along. By T.C. Richardson. Farm and Ranch. v.54, no.6. March 15, 1935. p.1, 4, 13, 15. Full utilization of Rio Grande awaits new treaty - international asset half used.

Movement and control of underground water. By Dr. Wm. Peterson. Pacific Rural Press. v.129, no.12. March 23, 1935. p.304. To effect a definite program for adequate control of underground water supply there should be (1) thorough hydrologic study of basin and investigation of mechanical difficulties to be overcome in prevention of waste; (2) program of education to present facts to public and create wholesome and intelligent public opinion; (3) well considered legislative plan with adequate provision for enforcement of law.

Report of the Kansas state board of agriculture, Division of water resources for the quarter ending March 1935. Topeka. Kansas, 1935. 22p. Containing the law relating to dams on dry water courses and information relative thereto.

Two great water problems. By J.J. Deuel. Pacific Rural Press. v.129. no.12. March 23, 1935. p.309. Conservation and redistribution of all stream flow water to remove deficit in gravity water supplies, and to relieve annual over-draft on ground water is one problem. And control and regulation by the State of underground water is other. By prompt and energetic action along proper lines, sufficient water may be conserved to take care of deficit on lands supplied with gravity water, and also to stop constant over-draft on ground water provided proper ground water control is made effective at same time. Unless ground water control is put into effect immediately, any good accomplished by conservation and redistribution of available water will be nullified by further development of present idle acres.

Water System.

First steps in farm plumbing. By Deane G. Carter. Farm and Ranch. v.54, no.6. March 15, 1935. p.4. Sink is starting point in good kitchen plan.

Running water or running feet. By George W. Kable. Electricity on the farm. v.8, no.5. May, 1935. p.10-12.

Welding.

Pipe welding. By D.O. Ferguson. Heating, Piping and Air Conditioning. v.7, no.6. June, 1935. p.272-275. Program of welding instruction and testing based on the idea of helping the welder, providing for his development, and insuring good pipe welding is described.

Wind Velocity.

Wind velocity in relation to height above ground. By W. Watters Pagon. Engineering News-Record. v.114, no.21. May 23, 1935. p.742-745. Review of available observations and studies throughout the world. Below the height of the gradient wind at about 1,250 feet the velocity at 100-ft. height apparently has a value of about 67 per cent of the gradient velocity, and increases from 2 to 5 per cent for each 100-ft. increase in height.

Wood Preservation.

Paraffin-impregnated wood. By J. Wiertelak and J. Czarnecki. Industrial and Engineering Chemistry. v.27, no.5. May, 1935. p.543-547. Resistance to water and sulfuric acid solutions. Experiments reported that impregnation with paraffin wax does not protect wood from moisture or from action of sulfuric acid at various concentrations, especially if action of liquids lasts for long time. Impregnation with paraffin wax, on other hand, lessens soaking of liquids into wood, and consequently all secondary phenomena, such as swelling production of acetic acid, reduction of surface hardness, etc., are slowed down. Preliminary experiments show that paraffin coating yields better protection from moisture and acids than impregnation, provided coating is not marred by cracks or lesions. In any case, if dilute sulfuric acid solutions (up to 2 per cent) are to be handled, paraffin-impregnated boards may be safely used in building tanks and containers. Increase in surface hardness of wood impregnated with paraffin wax may be of importance in manufacture of flooring.